

DISTRIBUTIONAL AND BIOLOGICAL NOTES ON  
NORTH AND CENTRAL AMERICAN SPECIES OF  
*ACMAEODERA* (COLEOPTERA: BUPRESTIDAE)<sup>1</sup>RICHARD L. WESTCOTT, WILLIAM F. BARR,  
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## ABSTRACT

New distributional data and adult and larval host records are presented for 85 species in the genus *Acmaeodera*. Seven species are recorded for the first time from Mexico and one is new to Central America. *A. neo-neglecta* Fisher is recorded from the United States and compared with *A. tubulus* (Fabricius). Adult behavior of *A. plagiaticauda* Horn is discussed.

## INTRODUCTION

Recent field trips and examination of collections by the authors have resulted in considerable new distributional and host plant information for some species of the genus *Acmaeodera*. In order to make this information available for inclusion in the forthcoming catalogue of Coleoptera of North America, this paper has been prepared.

For the Buprestidae the term "host plant" is usually applied only to that plant in which the larva completes its development rather than that on which the adult feeds. Larval feeding has been considered the more significant or interesting aspect of a species' biology. Specific records of adult feeding are scarce. However, we believe that adults of most, if not all, species feed as a necessary part of their life cycle. Therefore, in this paper we attempt a clear distinction between "adult host" and "larval host."

Adult host records for most of the species treated herein are based upon specimens collected from various flowers where they commonly feed on pollen and/or other floral structures. Anthophilous adult *Acmaeodera* are not usually host specific, but may be restricted to a single family of plants. Often, they show decided preference for flowers of one or a few species of plants. They may or may not be attracted to flowers of their larval host. Some species have been collected only on or flying to foliage or dead parts of various plants which are known or are presumed to be their larval hosts. In some instances, the adults have been observed feeding on the foliage of these hosts. Adult host information given herein has not to our knowledge been recorded in the literature, though a complete search was not undertaken.

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## ACKNOWLEDGMENTS

Unless otherwise stated, specimens are deposited in the collection of the collector. Collection abbreviations [in brackets] follow those of Arnett and Samuelson (1969) and Barr and Westcott (1976). The authors' names herein are abbreviated RLW, WFB, GHN and DSV, respectively. We are grateful for the privilege of examining specimens from the various institutions listed herein. F. G. Andrews, California Department of Food and Agriculture; W. A. Iselin, New Mexico Department of Agriculture; C. W. O'Brien, Florida A & M University; R. O. Schuster, University of California, Davis; Eric Smith, Field Museum of Natural History, Chicago; B. K. Dozier, Chula Vista, California; E. M. Fisher, Riverside, California; F. T. Hovore, Newhall, California; L. L. Lampert, Asheville, North Carolina; P. H. Sullivan, Pasadena, California; R. H. Turnbow, Jr., Athens, Georgia; and G. C. Walters, Los Angeles, California, have been particularly helpful in this regard. We give special thanks to F. M. Beer (FMB), Corvallis, Oregon, for providing many significant new records from his fine collection.

*Acmaeodera acanthicola* Barr. CALIFORNIA: *Imperial Co.*, Glamis, 1 mi W, 10-VIII-74, Hovore and Giesbert, beating palo verde and 22 mi N, 31-VIII-74, J. M. Cicero, on *Cercidium floridum* (NEW STATE RECORD). ARIZONA: *Pinal Co.*, 1 1/2 mi NE Apache Jct., 11-II-76, dead in pupal cell in *Celtis pallida* Torrey, FMB (NEW LARVAL HOST).

*Acmaeodera acuta* LeConte. NEVADA: *Clark Co.*, 6 mi NW Moapa, 16-VI-61, R. C. Bechtel; *Nye Co.*, Peavine Can., 3-VIII-67, G. D. Cooney; *White Pine Co.*, Cleve Cr., 7400', 28-VII-65, R. C. Bechtel; *Washoe Co.*, Reno, 27-V-60, 19-VI-59, F. D. Parker [all NSDA, WFBC]; Nixon, 24-VI-64, M. E. Irwin [UCRC]; Verdi, 12-VII-67, RLW. (NEW STATE RECORD). The known distribution of this primarily western Great Basin species strongly suggests that it is restricted to a riparian habitat. In southeastern Oregon large numbers have been collected on flowers of *Rosa* sp., a few on *Achillea* sp. In California, Owens Valley, it has been taken on flowers of *Encelia virginensis actonii*, *Sphaeralcea* sp., and *Salix* sp. Observations suggest that willows are a likely larval host for this insect. Most of the literature records for *A. acuta* refer to *A. retifera* LeConte.

*Acmaeodera alacris* Horn. MICHOACAN: 11 mi E Apatzingan, 20-VIII-54, Linsley, MacSwain, Smith [CISC, WFBC]; 8 mi E Apatzingan, 20-VII-66, DSV; 9 mi S Cuatro Caminos, 10-VII-66, DSV (NEW STATE RECORD).

*Acmaeodera alicia* Fall. Fall's description of this species was based on a single specimen labeled as from California, Los Angeles Co. We are not aware of another instance of its capture in that county. It is possible that said specimen was not taken in what today comprises the county, or that subsequent environmental changes may have altered its habitat there so this species has become extremely rare or even extinct. In light of the foregoing it seems worthwhile to substantiate its occurrence in CALIFORNIA as follows: *Imperial Co.*, El Centro, 9-IX-63, G. Harrison, light trap [RLWE]; 3 mi NW Glamis, 15/16-IX-72, M. Wasbauer and A. Hardy [CDAE, RLWE]; Fish Springs, 13-IX-75, R. C. Dickson [UCRC]; 1 mi S Travertine Rock, 30-VIII to 7-IX-65, R. C. Dickson [UCRC, WFBC]; Palo Verde, (20-22)-VIII-46, P. D. Hurd, J. W. MacSwain and W. F. Barr [WFBC, CASC, GHNC], and 10-X-71, E. E. Grissell and R. M. Bohart [UCDC]; *Riverside Co.*, Blythe, 19-VIII-46, J. W. MacSwain, [WFBC]; approx. 10 mi W Blythe, VIII-61, David L. Mays [RLWE]; 18 mi W Blythe, 14-X-67, R. M. Bohart [UCDC, RLWE]; 3.3 mi S Palm Desert, 10-VII-73, Westcott and Fisher [RLWE]; 2.5 mi S Palm Desert, 20-VII-68, G. Walters [GHNC]. The distribution of this insect in California appears restricted to the Colorado Desert. SONORA: Alamos, 15/20-VII-58; 22 mi W Alamos, 17-VII-63; 10 mi E Navojoa, 14-VII-58; 15 mi E Navojoa, 18/29-VIII-59, all RLW; 21 mi N Navojoa, Hwy. 15, 13-VIII-65, GHN; 28 mi S Navojoa, 3-IX-72, B. Villegas and E. A. Kane [UCDC]; 20 mi S Hermosillo, 3-IX-70, R. M. Bohart [UCDC] and 30-VII-66, G. C.

Walters; San Carlos, 3-IX-70, R. M. Bohart [UCDC]; 66 mi S Guaymas, 20-VII-65; 30-VII-66, all DSV; Campo Utah, 10-VIII-53, B. Malkin [CASC]; Sonoyta, 28-VIII-62, M. R. Beguhl [WFBC]; Santa Ana, 5-X-51, J. and M. Marquis [WFBC]; 19.4 mi S Estacion Llano, 25-VIII-64, E. I. Schlinger [UCRC]. SINALOA: 16 mi S Culiacan, 24-VII-73, Chemsak [CISC]. (*NEW RECORD, MEXICO*). Most of these specimens are more finely maculate than those on hand from Arizona and California. This species was reared from wood of *Acacia willardiana* Rose collected December, 1969 in Sonora, San Carlos Bay, em. during 1971, DSV (*NEW LARVAL HOST*). Adults have been collected on flowers of *Baileya pleniradiata* in Arizona; *Cercidium floridum*, *Larrea tridentata*, and *Sesbania exaltata* in California.

*Acmaeodera alpina* Barr. Some specimens of the type series, from the type locality in California (Barr 1972), were collected on flowers of *Leptodactylon pungens*; others were taken on granite rocks and bare soil, a habit also observed at several localities by Mr. Derham Giuliani, Big Pine, California (*in litt.*).

*Acmaeodera amabilis* Horn. TEXAS: *Brewster Co.*, 7 mi SW Alpine, 16-X-75, R. L. Penrose [RLWE]; *Culberson Co.*, Guadalupe Nat. Park, Upper Dog Canyon, 19-IX-76 and The Bowl, 4-X-73, D. E. Foster [TTCC]; *Jeff Davis Co.*, Davis Mts., 20-IX-38, D. J. and J. N. Knull [FMNH, WFBC], 16-X-75, F. Hovore (*NEW STATE RECORD*). On these specimens the elytral maculation tends towards that usually exhibited by the closely related *A. chiricahuae* Barr. This beetle has been collected in southern Arizona on flowers of the following plants: *Bahia dissecta*, *Haplopappus gracilis*, *Senecio macdougalii*, *Verbena gooddingii*, and *Viguiera longifolia*. It is primarily a late summer montane species.

*Acmaeodera amplicollis* LeConte. TEXAS: *Jeff Davis Co.*, Davis Mt. St. Park, 11-IV-65 [UCRC]. SONORA: Cananea, 6 mi NW mt. pass, ca. 6,000', 15-VIII-59, Nutting & Werner [UAIC, GHNC]; 14.1 mi W, 25-VIII-64. E. I. Schlinger [UCRC]. JALISCO: 12 mi N Lagos de Moreno, 11-VIII-62, DSV. (*NEW STATE RECORDS*). The latter represents the southernmost known occurrence for this species. It is a common flower-visitor in mountainous regions of southern Arizona where it has been collected on the following plants: *Baileya multiradiata*, *Gaillardia pinnatifida*, *Gutierrezia microcephala*, *Haplopappus gracilis*, *Heliopsis parvifolia*, *Selloa glutinosa*, *Senecio longilobus*, *Verbesina bipinnatifida*, and *Verbesina encelioides*.

*Acmaeodera angelica* Fall. UTAH: Zion National Park, D. E. Beck [BYUC] (*NEW STATE RECORD*). This common western species is often collected flying about or by beating various chaparral shrubs. It has been collected from flowers of *Adenostoma fasciculatum*, *Fallugia paradoxa*, *Eriogonum fasciculatum*, and *Lotus* sp.

*Acmaeodera atactospilota* Westcott. This species has been collected on *Encelia virginensis actonii* in the Owens Valley, California and a moderate series was taken on a yellow-flowered *Eriogonum* sp. near Benton Hot Springs, Mono Co. The latter genus is not known as a preferred adult host, though occasional specimens have been collected from flowers of two other species (Westcott 1971; G. C. Walters, *in litt.*).

*Acmaeodera auritincta* Fall. Specimens have been collected in western Texas on flowers of *Psilostrophe* sp. and *Viguiera stenoloba*.

*Acmaeodera bishopiana* Fall. Collected in Owens Valley, California on flowers of *Encelia virginensis actonii*.

*Acmaeodera bivulnera* Horn. ARIZONA: *Pinal Co.*, 1 1/2 mi NE Apache Jct., FMB, reared from *Krameria grayi* Rose and Painter, em. 20-X-76, one specimen (*NEW LARVAL HOST*). Heretofore, no larval host was known for this species. Large numbers of adults were collected on *Cercidium floridum* and *Hymenoclea salsola* (Nelson 1959); the former probably is a larval host but we believe the latter to represent only a convenient resting place.

*Acmaeodera bowditchi* Fall. NEW MEXICO: *Grant Co.*, 5 mi W Silver City, 16-VI-64, R. C. Dickson [UCRC] (*NEW STATE RECORD*). This widespread southwestern species has been collected in Arizona on flowers of *Bahia* sp., *Baileya* sp., *Cowania mexicana*, *Fallugia paradoxa*, *Opuntia* sp., and *Sphaeralcea laxa*. In Texas it has been taken on *Argemone* sp., *Haplopappus spinulosus* var. *turbinellus*, and *Vernonia marginata*.

*Acmaeodera carlota* Fall. Cut from wood of *Quercus dumosa* Nuttall in ARIZONA: Gila Co., 7 mi N Sunflower, 12-III-76, by FMB (NEW LARVAL HOST). Adults have been collected in April near Wikieup, Mohave Co., Arizona on flowers of *Eriogonum fasciculatum*, *Melampodium leucanthum*, and *Sphaeralcea* sp.

*Acmaeodera ceanothae* Nelson. Collected at the type locality, Yarnell, Arizona, on *Quercus turbinella*. This beetle was described from a series taken on *Ceanothus* sp.; it has been reared from this plant collected at Yarnell (J. M. Davidson, pers. comm.). Its capture on oak may be incidental, since the two plants grow in close association.

*Acmaeodera comata* LeConte. Longtime suspicions that larval hosts for this species are mesquites, *Prosopis* spp. were confirmed by numerous specimens cut from *P.* sp. by FMB in ARIZONA: Maricopa Co., near Painted Rock State Park, 20-III-76; Pima Co., 5 mi W Old Tucson, 20-III-76; Pinal Co., 1 1/2 mi NE Apache Jct., 21-I to 10-II-76. Large numbers of adults have been collected in northern Baja California, either beaten from (usually dead branches) or flying about *P. glandulosa* var. *torreyana* (L. Benson) M. C. Johnston (NEW LARVAL HOST).

*Acmaeodera connexa* LeConte. A collection at Cottonwood Creek, 4200', Inyo Co., California, on *Encelia virginensis actonii*, by Derham Giuliani [CASC], appears to represent an eastern range extension. This beetle also has been collected in California on *Erigeron* sp., *Eriodictyon* sp., *Rosa* sp., and *Salvia* sp. Tanner (1928) listed this species as common in Zion National Park, Utah but it is not known to occur in that state and he was almost certainly referring to *A. bowditchi* Fall.

*Acmaeodera conoidea* Fall. One specimen was reared from a twig of *Juglans* sp., ARIZONA: Coconino Co., Oak Creek Canyon, em. V-75, W. H. Tyson [GHNC] (NEW LARVAL HOST). Collected in Arizona on flowers of *Cowania mexicana*, *Erigeron divergens*, and *Fallugia paradoxa*.

*Acmaeodera convicta* Fall. SONORA: 17 mi N Navojoa, 20-VIII-60, DSV; 5 mi E Navojoa, 9-IX-70, R. M. Bohart [UCDC, RLWE]; 28 mi S Navojoa, 3-X-72, B. Villegas and E. A. Kane [UCDC]; 15 mi E Navojoa, 21-VIII-59, RLW and 30-VIII-60, DSV and RLW; 21 mi N Navojoa, Hwy. 15, 13-VIII-65, GHN; 23 mi NE Hermosillo, 19-VIII-69, J. T. Doyen and J. Haddock [GHNC, CISC]; San Carlos, 3-IX-70, R. M. Bohart [UCDC]; 30 mi S Guaymas, 4-IX-70, R. M. Bohart [UCDC]. SINALOA: 23 mi N Los Mochis Jct. and Hwy. 15, 14-IX-70, E. M. Fisher [RLWE]. (NEW RECORD, MEXICO).

*Acmaeodera cribricollis* Horn. This widespread denizen of the desert has been collected in California on flowers of mesquite, *Prosopis glandulosa* var. *torreyana*. A good discussion of this beetle was given by Hurd and Linsley (1975).

*Acmaeodera curtilata* Knull. This species was described from the Morongo Valley, San Bernardino Co., California and reported by Nelson (1959) from nearby in the northwestern Coachella Valley, Riverside Co. At these localities it is associated with *Dalea californica*, a shrub which does not occur further south. One specimen of *A. curtilata* was collected at Borrego Springs, San Diego Co., 1-IV-62, D. S. Verity, flying about *Dalea schotti*. Although this shrub is common in the Coachella Valley, the beetle has not been found associated with it there.

*Acmaeodera davidsoni* Barr. ARIZONA: Cochise Co., Chiricahua Mts., 12-VII-35, D. J. & J. N. Knull [FMNH] (NEW STATE RECORD). COAHUILA, Parras de la Fuente, Rincon del Montero, 1-VII-71, B. K. Dozier (NEW RECORD, MEXICO).

*Acmaeodera decipiens* LeConte. CHIHUAHUA: 16 mi W La Junta, 10-X-75; 3 mi S Gomez Farias, 9-X-75; 9.5 mi N Ignacio Zaragoza, 9-X-75, all W. Iselin [NMPI, GHNC] (NEW STATE RECORD). In southeastern Arizona this common montane anthophilous species has been collected on *Bahia dissecta*, *Erigeron neomexicanus*, *Haplopappus gracilis*, *Heliopsis parvifolia*, *Selloa glutinosa*, *Senecio longilobus*, *Senecio macdougalii*, *Sphaeralcea laxa*, *Verbena bipinnatifida*, *Verbesina encelioides*, *Viguiera cordifolia*, and *Viguiera longifolia*.

*Acmaeodera delumbis* Horn. This species was for a long time considered a synonym of *A. gibbula* LeConte; therefore, records of it are few even though it is not un-

commonly collected. Specimens were examined from NEW MEXICO: *Otero Co.*, Alamogordo, 29-VI-70, Bill Apperson [EMUS]; *Hidalgo Co.*, Peloncillo Mts., Granite Gap, 18 mi N Rodeo, 6-VIII-74 and 5-VII-77, on *Acacia constricta* GHN; *Dona Ana Co.*, Jornada Expt. Range, 16-VI to 14-VII-70 [NMPI, GHNC]; 7 mi NE Las Cruces, 12-VII-75 [NMPI, GHNC]; 5 mi W Las Cruces, Hwy. 70, 16-VI-65, on *Prosopis*, G. H. & D. E. Nelson. TEXAS: El Paso, 3-VII-71, D. Ingram [NMPI, GHNC]; Hot Springs, Big Bend National Park, 12-VII-58, WFB, on dead mesquite, catclaw and squawbush. (NEW STATE RECORDS).

*Acmaeodera diffusa* Barr (*Acmaeodera hepburni* var., Tanner 1928, MISIDENTIFICATION). The occurrence of *A. hepburni* in Utah, reported by Tanner, was based on a misidentified specimen of *A. diffusa* labeled "Zion National Park, Utah, Aug. 1925/Vasco M. Tanner collector/*Acmaeodera hepburni*, W. Knaus 1926, 9243" [BYUC].

*Acmaeodera disjuncta* Fall. CHIHUAHUA: Cuauhtemoc, 22-VII-58; Meoqui, 2-IX-57, both W. W. Tanner, W. G. Robinson [BYUC] (NEW STATE RECORD). It has been collected in Arizona and New Mexico on flowers of *Baileya multiradiata*, *Chrysothamnus nauseosus*, *Gutierrezia microcephala*, *Helianthus petiolaris*, and *Verbesina encelioides*.

*Acmaeodera dolorosa dolorosa* Fall. Reared from wood of *Simmondsia chinensis* (Link) C. K. Schneider, CALIFORNIA: *San Diego Co.*, 5 mi E Jacumba, em. 29-III-77, cut from wood 23-VIII-72 and 11-IV-76 (both dead), DSV. Cut from branch *Prunus fasciculata* (Torrey) Gray, CALIFORNIA: *Riverside Co.*, Pinyon Flat, IV-77 (dead), DSV. (NEW LARVAL HOSTS).

*Acmaeodera dolorosa liberta* Fall. Based on a single specimen, the following represents the northernmost occurrence: NEVADA: *Washoe Co.*, Reno Hot Springs, 10-VII-62, RLW (NEW STATE RECORD). In the Owens Valley, California it has been taken on flowers of *Encelia virginensis actonii*.

*Acmaeodera fisheri* Cazier. Nothing has been recorded on the biology of this rather common Colorado Desert species. ARIZONA: *Yuma Co.*, 5 mi W Yuma, em. 18-VII, 5-IX-76 from branches of *Atriplex lentiformis* (Torrey) Watson, FMB (NEW LARVAL HOST).

*Acmaeodera flavinigrapunctata* Knull. In western Texas, on flowers of *Thelesperma simplicifolium*, *Viguiera stenoloba*, and *Zexmenia brevifolia*.

*Acmaeodera flavopicta* Waterhouse. TEXAS: *Terrell Co.*, 10 mi SE Dryden, 1-X-76, R. H. Turnbow [RHTC, GHNC]. COAHUILA: Saltillo, 4900', 16-X-57, H. A. Scullen [OSUC]. GUANAJUATO: 27 mi S Saucedo, 6-IX-70, E. M. Fisher [RLWE] (NEW STATE RECORDS).

*Acmaeodera flavosparsa* Waterhouse. This species was described from "Mexico" and has been recorded only from Guerrero. MICHOACAN: Morelia, 22-IX-57, R. & K. Dreisbach [TAMU, SGWC] (NEW STATE RECORD).

*Acmaeodera gibbula* LeConte. This wide-ranging and common species is recorded from Texas to California in the United States and from Coahuila to Durango and Baja California Sur in Mexico. UTAH: St. George, 12-VI-24, A. M. Woodbury [BYUC]. NEVADA: *Clark Co.*: Tule Spring, 6-VIII-67, WFB, on dead *Acacia greggii*; Las Vegas, 12-IX-69, DSV, on *Prosopis glandulosa* var. *torreyana*. SINALOA: Culiacan, 22-VIII-60, RLW; 20 mi S Culiacan, 22-VII-65, DSV; 4 mi NW Choix, 27-VIII-69, T. A. Sears, R. C. Gardner, C. S. Glaser [UCDC, RLWE]; 70 mi N Culiacan, 20-VIII-60; and Elota, 26-VIII-60, all DSV [GHNC]; 23 mi N Los Mochis Jct. and Hwy. 15, 14-IX-70, E. M. Fisher [DSVC]. (NEW STATE RECORDS). These Mexican specimens, as well as a series on hand from Sonora, represent a form which is proportionately narrower, apically in particular, than those examined from the United States. Considerable variation occurs elsewhere and a thorough study of this is needed. Larval hosts for this species include palo verde (Knull 1937) and *Prosopis* spp. (Van Dyke 1942). Specimens were reared from *Acacia greggii* Gray, CALIFORNIA: *Riverside Co.*, Pinyon Flat, em. 10-VI-76, DSV; *Imperial Co.*, Mt. Springs, wood coll. 4-II-62, em. 14-VII-63, GHN; and a small series from *Salix* sp., ARIZONA: *Yuma Co.*, Morelos Dam, em. 2-VI-73, F. T. Hovore [FTHC, DSVC,

RLWE] (*NEW LARVAL HOSTS*). We have assumed this species to utilize a wide variety of leguminous shrubs and trees; however, the record from willow may indicate that this insect is a general borer in dead wood throughout its range. In western Texas it has been collected on flowers of *Bahia pedata*.

*Acmaeodera gillespiensis* Knull. Taken on flowers of *Actinea lineatifolia*, *Argemone* sp., *Baileya multiradiata*, and *Vernonia marginata* in the Davis Mountains, Texas.

*Acmaeodera griffithi* Fall. This species is known only from southcentral and southwestern Arizona, where it has been collected on *Prosopis velutina*, *Acacia greggii*, *Olneya tesota*, and *Cercidium* sp.

*Acmaeodera haemorrhoea* LeConte. Formerly known under the name "*rubronotata*" (Barr 1975), this species has been collected in southern Texas on flowers of *Viguiera stenoloba*.

*Acmaeodera hepburni* LeConte. This common species was collected on flowers of *Encelia virginensis actonii* in California, Inyo Co., Cottonwood Creek, 4200', Derham Giuliani [CASC], which represents an eastern range extension. Elsewhere in California, additional flower records are *Erigeron* sp., *Helianthus gracilentus*, and it is very common on *Eriophyllum confertiflorum*. Tanner (1928) listed this species (as "*Acmaeodera hepburni* var.?"") from Utah but this was based on a misidentified specimen of *A. diffusa* Barr. Chamberlin (1926) recorded *A. hepburni* from New Mexico and Arizona but this may refer to *A. latiflava* Fall since the former could not occur in those areas. The occurrence of *A. latiflava* in New Mexico remains to be discovered.

*Acmaeodera idahoensis* Barr. Reared from *Quercus garryana* Douglas, OREGON: Wasco Co., Wapinitia, 9-IV-35, R. L. Furniss, W. J. Buckhorn [USFS Coll., Corvallis, Oregon] (*NEW LARVAL HOST*).\*

*Acmaeodera impluviata* Mannerheim. This common species appears to occupy a wide range from western Mexico to Nicaragua, but has been recorded from only a few localities. Its elytral pattern varies from maculate in the northern portion of its range to immaculate in the southern. SINALOA: Guamuchil, 6-VII-70, D. W. Davis; 20 mi E Villa Union, 235 m, 20-VIII-64, E. I. Schlinger; 64 mi SE Culiacan, 6-IX-70, Hanson & Whitworth; Mazatlan, 8-VIII-70, D. W. Davis [all UCRC]; Elota, 26-VIII-60 and Culiacan, 22-VIII-60, RLW; 15 mi SE Escuinapa, C. D. Johnson [NAUF]. NAYARIT: 5 mi E San Blas, 27-VIII-61, DSV; San Juan Peyotah, 2-VIII-55 and Jesus Maria, 6, 7, 26, 27-VII-55, B. Malkin [CISC, GHNC]. COLIMA: 23 mi N Manzanillo, 26-VIII-70, M. S. & J. S. Wasbauer [CISC]; 21 mi W Armeria, 27-VII-63, RLW; Armeria, (26-28)-VII-56, A. E. Lewis [& RLWE]. MICHOACAN: 29 mi SW Pihuamo, 24-VII-66, DSV. CHIAPAS: El Ocotal, 3-VIII-52, Gilbert, and Suchiapa, 17-VII-57, Durham [CISC]; 4.9 mi NE Frontera-Comalpa, 2125', 1-IX-67, R. E. Leech [CASC]. (*NEW STATE RECORDS*). GUATEMALA, Sta. Rosa, 16 km SE Oratorio, 650 m, (16-17)-VIII-74, E. M. & J. L. Fisher [RLWE]. EL SALVADOR: Quezaltepeque, 500 m, 19-VI, 5-VII-63, Cavagnaro & Irwin [UCDC, CASC, WFBC]; 31 km E Usultán, 18-VII-74, E. M. & J. L. Fisher and La Union, Playa el Icacal, 8-VII-75, E. M. & J. L. Fisher [RLWE]. HONDURAS, Com., 4 mi SW Comayagua, 1600', 18-VII-74, C. W. & L. O. O'Brien [GHNC]. (*NEW COUNTRY RECORDS*).

*Acmaeodera labyrinthica* Fall. Collected in California from a wide variety of flowers, particularly of the family Compositae. In desert transition areas it has been taken on *Encelia farinosa* and *E. virginensis actonii*.

*Acmaeodera lateralis* Chevrolat. This species appears to be very rare in collections and has been recorded only from Puebla (no definite locality). Additional specimens from that state are: 26 km S Zapotitlán, 2000 m, 5-XI-76, E. Fisher, P. Sullivan [RLWE]; 6 mi SE Acatlán, 4700', 8-X-75; 7 km SE Morelos Canada, 7700', 4-X-75, both J. Powell [CISC]. GUERRERO: Sabana, 7-X-63, A. E. Michelbacher [CISC] (*NEW STATE RECORD*).

*Acmaeodera latiflava latiflava* Fall. ARIZONA: Mohave Co., Hualapai Mtn. Park, 16-VI-73, D. G. Marqua [DSVC, RLWE] and 24 mi SE Wickieup, 10 & 15-IV-66, WFB; Yavapai Co., 13 mi W Prescott, 20-VI-64, R. L. Penrose [WFBC]; Yuma Co., Kofa Mts., Palm Canyon, 18-III-66, R. S. Funk [NAUF] (*NEW STATE REC-*

ORD). Collected in California on *Adenostoma* sp., *Encelia* sp., *Eriodictyon trichocalyx*, *Helianthus gracilentus*, *Salvia apiana*, *S. vaseyi*, *Sphaeralcea ambigua*, *Viguiera deltoidea parishii*, and *Yucca whipplei*; in Nevada on *Stephanomeria pauciflora*; and in Arizona on flowers of *Baileya* sp., *Melampodium leucanthum* and *Opuntia* sp. (beavertail).

*Acmaeodera latiflava lineipicta* Fall. No biological data on this subspecies have been published. ARIZONA: Pinal Co., Tonto N.F., Oak Flat Rec. Area, 10-III-76, FMB, cut from stalks *Dasylyrion wheeleri* S. Wats. ex Rothrock (NEW LARVAL HOST). Collected on flowers *Sphaeralcea* sp. near Globe, Arizona.

*Acmaeodera lauta* Barr. MORELOS: 13 mi S Cuernavaca, 8-VII-62, D. H. Janzen [CISC] (NEW STATE RECORD).

*Acmaeodera ligulata* Cazier. Collected on flowers of *Actinea linearifolia* in western Texas; *Cowania mexicana* and *Fallugia paradoxa* in Arizona. The only larval host known was *Quercus pungens* Liebmann (Cazier, 1940). Specimens were cut and reared from *Quercus dumosa* Nuttall, ARIZONA: Gila Co., 7 mi N Sunflower, 12-III and 8-IV-76, by FMB (NEW LARVAL HOST).

*Acmaeodera macra* Horn. This rather uncommonly collected fall species is known only from Texas, where it has been collected on *Acacia berlandieri* and *Verbesina encelioides*.

*Acmaeodera maculifera* Horn. Until recent years this species, also fall-occurring, was rare in collections. However, it has been taken in large series in southern New Mexico. Flower records include *Chrysothamnus viscidiflorus* var. *puberulus*, *Helianthus petiolaris*, and *Sphaeralcea* sp.; also, it has been collected from leaves (mostly dried) of *Sphaeralcea* sp. which was not in bloom.

The specimen listed by Waterhouse (1889:181, Fig. 14a) as a variety of *A. delectabilis* Waterhouse from Villa Lerdo actually is *A. maculifera*. This specimen, in the British Museum (Natural History), establishes the occurrence of *A. maculifera* in MEXICO for the first time.

*Acmaeodera mariposa* Horn. Reared from *Cercocarpus ledifolius* Nuttall, OREGON: Klamath Falls, 19-VIII-11, FCC [USFS Coll., Corvallis, Oregon] (NEW LARVAL HOST). This insect has been collected sparingly in southwestern Oregon but we are not aware of any collections made east of the Cascade Range.

*Acmaeodera miliaris* Horn. NUEVO LEON: Vallecillo, (2-5)-VI-51, P. D. Hurd [CISC]; Monterrey, 9-XI-39, J. Marquis. TAMAULIPAS: Villa Juarez, 10-XI-39, J. Marquis. (NEW STATE RECORDS). Collected in Texas on flowers of various composites, including *Viguiera stenoloba*; also taken on *Acacia constricta* and dead twigs of *Mimosa* sp.

*Acmaeodera mimicata* Knull. This uncommonly collected species was taken in SONORA: 6 1/2 mi S Santa Ana, 6-VII-73, DSV and 30 mi S Hermosillo, 24-V-62, Parker & Stange [UCDC] (NEW RECORD, MEXICO). CALIFORNIA: Imperial Co., Frink Springs, 22-VII-72, DSV, beaten from foliage of *Olneya tesota*, and 1 1/2 mi S Frink Springs: 22-VII-72, 17-VI-73, DSV; 23-VI, 3-VII-73, G. C. Walters, all beaten from dead branches of *O. tesota* in the early morning or late afternoon (NEW STATE RECORD). A specimen was reared from *Celtis pallida* Torrey, ARIZONA: Pinal Co., 1 1/2 mi NE Apache Jct., 22-VIII-76, FMB (NEW LARVAL HOST). In Maricopa Co., Arizona it has been collected on *Cercidium microphyllum* and dead *Lycium* sp. It appears that this beetle may utilize a wide variety of desert trees and shrubs as hosts.

*Acmaeodera mixta* Horn. NEBRASKA: Sioux Co., 20-VI-76, W. T. Morgan [GHNC] (NEW STATE RECORD). Occurs commonly on the flowers of various plants, especially composites, including *Viguiera stenoloba* in western Texas.

*Acmaeodera mojavei* Westcott. CALIFORNIA: Los Angeles Co., Palmdale, 4-I-75, F. Hovore, dug from stem of *Lycium* sp. This represents the first recorded larval host for this species. According to Frank T. Hovore (*in litt.*) the larvae appear associated with dead or decadent portions of live stems. Often they were in the lower portion of stems girdled by *Anelaphus inflaticollis* Chemsak (Coleoptera, Cerambycidae). In Arizona, *A. mojavei* has been collected on flowers of *Baileya* sp.

*Acmaeodera monticola* Fisher. This species was described from two specimens from Oaxaca. Specimens from the following localities were compared with those and appear to be conspecific: PUEBLA: 5 mi W Chapulco, 5800', 14-VII-70, E. Fisher, P. Sullivan [RLWE]; Cacaloapan, 20-VIII-63, F. D. Parker, L. A. Stange [UCDC, RLWE]. Additional specimens are on hand from 80 mi E Puebla, 20-VIII-63, A. Hardy [DSVC, RLWE] and 15 mi NW Chapulco, 1-VIII-64, E. Fisher, D. Verity [DSVC]. (*NEW STATE RECORD*).

*Acmaeodera nautica* Van Dyke. Taken in Contra Costa Co., California on flower of *Rosa* sp.

*Acmaeodera neglecta* Fall. OKLAHOMA: *Carter Co.*, Dickson, 18-V-66, D. C. Arnold; *Creek Co.*, Mannford, 30-V-66, D. C. Arnold, on *Coreopsis grandiflora* (*NEW STATE RECORD*). Cut from *Quercus pungens* Liebmann, TEXAS: *Uvalde Co.*, 3 mi S Uvalde, 24-XI-66, F. M. & V. S. Beer (*NEW LARVAL HOST*).

*Acmaeodera neoneglecta* Fisher. This species was described from a single specimen found in mesquite from Mexico, intercepted at Brownsville, Texas, 21-XII-37. The type appears slightly teneral with the darker parts of the elytra not quite fully pigmented. When it was described, it was compared to *A. neglecta* Fall but it appears to be closer to *A. tubulus* (Fabricius). It differs in being more narrowly cylindrical and in having the front of the head more convex. The population in southern Texas that has previously been regarded as *A. tubulus* appears to be *A. neoneglecta*. Material is at hand from San Patricio, Duvall, McMullen, Starr, Hidalgo, and Cameron counties. Adults are active during March and April and have been collected on *Prosopis glandulosa* Torrey and flowers of *Opuntia lindheimeri* Englemann. In Hidalgo Co. they have been reared from limbs of *Pithecellobium flexicaule* (Benth) Coulter and from *P. glandulosa*, Santa Ana Wildlife Refuge, em. 26-II to 18-III-77, R. H. Turnbow, Jr.; cut from *Acacia* spp., Maverick Co., Highway 277, 10.6 mi E Eagle Pass, 3-II-70 and Webb Co., 27 mi NE Laredo, 5-II-70, F. M. Beer. (*NEW RECORD, USA; NEW LARVAL HOSTS*). Typical *A. tubulus* is found in more northern and eastern Texas. Material is before us from Henderson, Anderson, Stephens, Real, Brazos, and Bastrop counties.

*Acmaeodera nevadica* Barr. CALIFORNIA: *San Bernardino Co.*, New York Mts., 2 mi S Brant, 29-V-77, DSV, flowers of *Sphaeralcea* sp., *Cowania* sp., and *Cirsium* sp. [RLWE] (*NEW STATE RECORD*). The small series examined compares very well with paratypal material from Clark Co., Nevada.

*Acmaeodera nigrovittata* Van Dyke. Longstanding suspicions that a host for this California species is *Atriplex polycarpa* (Torrey) Watson were confirmed when two dead adults were dug from this plant in Fresno Co.: along Hwy. I-5, 19 mi NNW Jct. Hwy 33 South, 20-XII-74, RLW; 18 mi SW Mendota, Sec. 15, T16S, R13E, 27-II-75, F. Andrews, A. Gilbert, E. Paddock [RLWE]. It was also reared from *Suaeda fruticosa* (Linnaeus) Forsskal collected in Tulare Co., Tipton, 4-IV-57, R. P. Allen [WFBC, CDAE]. (*NEW LARVAL HOSTS*). Adults have been taken on flowers of *Cirsium* sp. and *Centaurea solstitialis*.

*Acmaeodera oaxacae* Fisher. Recent collections prove that this is a very common and widespread species in Mexico, though it has been recorded only from Oaxaca (the type-locality, Tehuantepec). GUERRERO: Canon del Zopilote, 48 km N Chilpancingo, 520 m, 1-VII-75 and 3½ mi S Rio Balsas at Hwy. 95, 17-VIII-70, E. M. Fisher [RLWE]; 18 mi S Iguala, 22-VII-63, Parker and Stange [UCDC, RLWE]. PUEBLA: 11 km NW Tehuizingo, 1200 m, (7-8)-VIII-74, E. M. & J. L. Fisher [RLWE]; 3 mi N Petalcingo, 21-VIII-63, Parker & Stange [UCDC, RLWE]. MICHOACAN: 5 mi SE Tiquicheo, 1400', 8-VII-70; 9 mi E Capirio, 800', 6-VII-70; Barranca Hondo, 19 mi S Uruapan, 3000', 5-VII-70; 22 mi SE Huetamo, 9-VII-70; 44 km NE Arteaga, 610 m (Hwy. 37, K231), 10-XI-76, all E. Fisher, P. Sullivan [RLWE]. COLIMA: 8 mi N Tecoman, 25-VII-66, DSV. SINALOA: Mazatlan, 9-IX-64, E. Fisher, D. Verity [DSVC]; 7 mi S Culiacan, 23-VIII-60, RLW, DSV. SONORA: Alamos, 30-VIII-57, RLW; 15 mi E Navojoa, 17-VII-58, RLW [DSVC]. (*NEW STATE RECORDS*). A few of these specimens, especially those from Sonora and Sinaloa, exhibit a distinct bluish cast on the elytra, which usually are black with a faint aeneous reflection.



*Acmaeodera obtusa* Horn. OKLAHOMA: *Sequoyah Co.*, Gore, 20-VII-37, Standish & Kaiser; Craderville, 8-VII-34, J. Stankavich [both OSEC]; *Marshall Co.*, Lake Texoma, 2 mi E Willis, VII-65, R. M. Bohart [UCDC]. (NEW STATE RECORD).

*Acmaeodera ornata* (Fabricius). TENNESSEE: Burrville, 5-VII-59, B. Benesh; Knoxville, 17-IV-55, H. and A. Howden [both WFBC] (NEW STATE RECORD). Little is known concerning the habits of this uncommon eastern species. Mr. Frank Hovore (*in litt.*) reports collecting a specimen that was apparently ovipositing in the scarred stump of a recently-cut *Persea borbonia* (L.) Spreng. in Florida, Dune Co., 4 mi N Oldtown, 6-V-78.

*Acmaeodera ornatoides* Barr. TEXAS: *Edwards Co.*, vic. Carta Valley, 1-II-70, FMB, cut from dead, standing, weatherbeaten *Quercus virginiana fusiformis* (Small) Sargent (NEW LARVAL HOST).

*Acmaeodera panamintensis* Westcott. The range of this species is extended southward approximately 135 miles with the collection of a large series in California, *San Bernardino Co.*, 2 mi NW Baldwin Lake, 6150', 19-VI-73, 16-VI-74, DSV and 30-VII-75, 24-VII-76, G. C. Walters. All specimens were taken as they flew about or rested on *Ephedra viridis* Coville. Collected from flowers of *Monardella* sp., *Salvia* sp., and *Tetradymia* sp. in California, *Mono Co.*, Sherwin Grade, 6500'.

*Acmaeodera paradisjuncta* Knull. Reared from dead flowering stalks of sotol, *Dasyilirion wheeleri* Watson, TEXAS: *Terrell Co.*, 19 mi NE Dryden, em. (1-6)-V-77, R. H. Turnbow [& RLWE] (NEW LARVAL HOST). Collected in western Texas on flowers of *Baileya multiradiata*, *Mentzelia oligosperma*, *Psilostrophe* sp., *Viguiera stenoloba*, and *Zexmenia brevifolia*.

*Acmaeodera parkeri* Cazier. NEW MEXICO: *Hidalgo Co.*, Post Office Cyn., 4-VIII-64, J. H. Puckle, M. A. Mortensen, M. A. Cazier, on *Allionia incarnata* [ASUT, WFBC] (NEW STATE RECORD).

*Acmaeodera pinalorum* Knull. SONORA: Km 56 E Los Hornos, 27-VIII-78, B. K. Dozier; 10 mi E Navojoa, 14-VII-58; 22 mi W Alamos, 17-VII-63, both RLW. SINALOA: 13 mi S Guamuchil, 21-VII-61, DSV; 40 mi S Culiacan, 22-VII-54, M. Cazier, W. Gertsch and Bradts [AMNH, WFBC]. (NEW RECORD, MEXICO). TEXAS: *Uvalde Co.*, 5 mi N Uvalde, 22-VI-61, P. D. Christenson [RLWE] (NEW STATE RECORD). These collections extend the distribution of this species approximately 500 miles southward and 600 miles eastward, respectively. The Texas specimen was at first thought to be an aberrant form of the related *A. uvaldensis* Knull, but closer examination proved otherwise.

*Acmaeodera plagiaticauda* Horn. The range of this species is in California and southwestern Oregon. The adult is always associated with manzanita, *Arctostaphylos* spp. Beer (1940) established a larval host by chopping adults from their pupal cells in *Arctostaphylos viscida* Parry. One of us (RLW) made some interesting observations of the beetle on this plant along a small narrow wash in Oregon, *Josephine Co.*, 10 mi N Grants Pass, 12-VII-73. Specimens had been collected here several times previously and almost always were taken while flying over manzanita bushes from approximately 3:30 to 5 p.m., rarely earlier. Occasionally they were observed resting on new leaves which are coppery-reddish, thus closely matching the beetle in color. Approximately 15 specimens were collected on fleshy red leaf-curl galls which are produced apically on *A. viscida* leaves by the aphid, *Tamalia coweni* (Cockerell). Up to three beetles per twig tip were seen and about half the specimens were taken from one unthrifty bush (besides numerous galls, many leaves were dead). Beetles were observed feeding on these fleshy galls.

*Acmaeodera prorsa* Fall. In California adults have been taken on and/or flying to flowers of *Rosa californica*, *Salvia* spp., *Turricula parryi*; and on *Quercus dumosa*.

*Acmaeodera pulchella* (Herbst). Specimens of this common widespread eastern species are from ARKANSAS: *Washington Co.*, 18-VI-42, F. A. Lawson [WFBC]; *Johnson Co.*, Ozone, (8-9)-VII-70, E. G. Riley [GHNC]. TENNESSEE: Burrville, 14-VI-54, B. Benesh [WFBC]. (NEW STATE RECORDS). Taken in Minnesota on flowers of *Coreopsis palmata*, *Heliopsis helianthoides*, *Ratibida pinnata*, and *Rudbeckia hirta*.

*Acmaeodera resplendens* Van Dyke. Taken in the Santa Rita Mts., Arizona, on *Verbena gooddingii*.

*Acmaeodera robusta* Horn. In the Owens Valley area of California this species has been collected from flowers of *Dalea* sp. and *Encelia virginensis actonii*; and on twigs of *Chrysothamnus* sp. and *Ephedra* sp.

*Acmaeodera rubronotata* Laporte and Gory. TEXAS: Culberson Co., Guadalupe Nat. Park, Upper Dog Canyon, 20-VIII-76, D. Ralston, on *Asclepias* [TTCC] (NEW STATE RECORD). No larval host was known until a specimen was cut from *Quercus* sp. in ARIZONA: Mohave Co., 17 mi SE Wikieup, 20-VI-75, FMB (NEW LARVAL HOST). Until recently (Barr 1975) this common species was well known as *A. sparsa* Horn. Texas records in the literature refer to *Acmaeodera haemorrhoea* LeConte. In Arizona it has been collected on flowers of the following: *Bahia dissecta*, *Baileya multiradiata*, *Erigeron neomexicanus*, *Haplopappus gracilis*, *Helianthus nuttallii*, *Heliopsis parvifolia*, *Selloa glutinosa*, *Senecio longilobus*, and *Verbesina encelioides*.

*Acmaeodera sabiniae* Knull. SONORA: San Carlos Bay, 6-VII-73, DSV; 16 mi N Navojoa, 13-VI-65, E. M. Fisher [DSVC]; 10 mi E Navojoa, 14-VII-58, RLW; Bahia San Francisquito, 16-VI-62, E. Sleeper, et al [CSLB]. In Mexico, this species has previously been recorded only from Tiburon Is., Sonora, and Baja California Sur. Specimens from CALIFORNIA: Inyo Co., 6 mi N Ballarat, 4-VI-61, RLW, on *Prosopis glandulosa* var. *torreyana*, represent the northernmost recorded locality. Adults have been beaten from *Baccharis* sp., *Pluchea sericea*, and *Prosopis pubescens* in California, but more often they have been taken on or flying to *Prosopis glandulosa* var. *torreyana* and the latter has been assumed to be a larval host. This was substantiated by the rearing of several specimens from small dead branches collected in BAJA CALIFORNIA SUR: Bahia Concepcion, Playa El Coyote, 7-VI-75, RLW and one specimen cut from that plant in California, Inyo Co., 7 mi NE Shoshone, 9-IV-76, FMB (NEW LARVAL HOST).

*Acmaeodera scalaris* Mannerheim. CHIAPAS: 17 mi SW Ciudad Cintalapa, 7-VIII-56, D. D. Linsdale [GHNC]; 32½ mi E Comitán, 2200', 3-IX-65, Ball and Whitehead [USNM]. COLIMA: Tecuizitlan, 26-VII-63, Ackerman & Whitehead [USNM]. NAYARIT: Ahuacatlan, 15-IX-70, R. M. Bohart [UCDC, RLWE]; Ruinas de Ixtlan, 4-IX-72, B. Villegas, E. A. Kane [UCDC]. OAXACA: 3 mi W El Camaron, 6-VIII-67, F. D. Parker & L. A. Stange [UCDC]. QUERETARO: Queretaro, 31-VIII-58, H. F. Howden [GHNC]. SINALOA: 3 mi E Villa Union, 24-VII-72, J. & M. A. Chemsak, A. & M. Michelbacher [GHNC]; Culiacan, 22-VIII-60; 7 mi S Culiacan, 23-VIII-60, RLW & DSV [& GHNC]; Venedio, 10-VIII-18 [CASC]; nr. Pericos, 2-XI-65, W. H. Cross [USNM]; 6 mi NW Choix, 6-VIII-68, Sears, Gardner & Glaser [UCDC]; El Tazon, 10-IX-70, R. M. Bohart [UCDC]. TAMAULIPAS: 40 km N Soto la Marina, 5-IX-75, E. M. & J. L. Fisher [RLWE]; 6 mi N C. Victoria, 17-XI-48, E. S. Ross [CASC]; Villa Juarez, 10-XI-39, J. Marquis [M. Marquis Coll.]. ZACATECAS: Ojocaliente, 25-VIII-70, B. Villegas [UCDC] (NEW STATE RECORDS). GUATEMALA: ZACAPA, Zacapa, 7 mi S, 24-VIII-74, E. M. & J. L. Fisher [RLWE] and 2 mi NW, 2000', 25-VII-74, C. W. & L. O'Brien [GHNC]. HONDURAS: VALLE, 18 km W Nacaome, 9-VII-75, E. M. Fisher [RLWE]. (NEW COUNTRY RECORDS). This species is widespread and common in the southern portions of Arizona, New Mexico and Texas. It is found practically throughout Mexico, where it is much more variable than in the United States and melanic forms occur, but has not previously been recorded from Central America. A study of the geographical variation of this and related Mexican species is needed.

Adults are usually taken on flowers. In New Mexico they have been collected on *Baileya* sp., *Gutierrezia sarothrae*, *Helianthus petiolaris*, *Sphaeralcea* sp.; and in Arizona on *Bahia absynthifolia* and *Cleome* sp.

*Acmaeodera serena* Fall. Previously known only from Arizona and Baja California. A series of specimens is on hand from CALIFORNIA: Imperial Co., 15 mi E Calexico, 28-V-66, G. C. Walters; Winterhaven, I-VII-62, 20-VI-63, DSV; 22-VI, 13-VII-63, RLW; 4/5-VII-64, 3-VII-66, 24-VI-67, GHN, G. C. Walters; 13-VII-66, R.

Flame, on wild cotton [CDAE]; 12-VII-62, W. J. Akins, Argon light trap [CDAE]; *Riverside Co.*: Blythe, 8-VII-56, J. I. Stage [DSVC]; Ripley, 19, 25, & 26-VI-46, WFB. (*NEW STATE RECORD*). Some of these were taken on flowers of arrowweed, *Pluchea sericea*, and others on blossoms of *Sphaeralcea* sp.

*Acmaeodera sphaeralceae* Barr. *NEW MEXICO*: *Otero Co.*, La Luz, 11-V-76, on yellow composites; *Grant Co.*, Mule Creek, 18-V-77, all W. Iselin [NMPI, GHNC] (*NEW STATE RECORD*).

*Acmaeodera superba* Waterhouse. This beautiful metallic green or blue and red species has been recorded from Mexico (Puebla, no specific locality) and Brazil. The latter locality seems highly questionable. Specimens are on hand from Puebla, 15 km WNW Izucar de Matamoros (K151), 1300 m, 6-XI-76, E. M. Fisher [RLWE]. GUERRERO: 30 mi N Chilpancingo, 31-VIII-64, E. Fisher, D. Verity [DSVC]; 5 mi N Chilpancingo, 25-VIII-58, E. L. Mockford [GHNC]; 3 mi N Zumpango del Rio, 12-VIII-60, Selander & Mathieu [DSVC]; 49 km N Chilpancingo (K51), 460 m, 7-XI-76, E. Fisher, P. Sullivan [RLWE]; vic. Mexcala, 1 mi S Rio Balsas at Hwy. 95, (3-4)-IX-70, E. M. & J. L. Fisher [DSVC, RLWE] (*NEW STATE RECORD*).

*Acmaeodera texana* LeConte. This species has been recorded from Texas, Oklahoma, and Louisiana. Records in the J. N. Knull collection [FMNH] include: NORTH CAROLINA: Lillington, 13-VI-41, S. C. Schell. GEORGIA: Kennesaw Mt., 4-VII-44, P. W. Fattig; Dallas, 28-VII-40, P. W. Fattig. ALABAMA: Eufaula, 18-VI-54, R. L. Fischer; Mobile, 10-V-10. MISSISSIPPI: *Grenada Co.*, 18-VI-44, J. A. Wilcox. (*NEW STATE RECORDS*). There is also one specimen, without collector, labelled ARIZONA: Portal, 20-VII-68, which is probably mislabeled, as this locality is far removed from the known range and habitat of this species.

*Acmaeodera trizonalis* Kerremans. This striking and apparently uncommon species has been known only from Guerrero. COLIMA: Manzanillo, 21-I-66, F. T. Scott [RLWE]. JALISCO: Barra de Navidad, IX-65, N. L. & H. K. Krauss [BKDC]. (*NEW STATE RECORDS*).

*Acmaeodera tubulus* (Fabricius). Apparently this common eastern species has not been listed from the following states, though they fall within its generally recorded distribution. ARKANSAS: State University, 11-VI-1894, Knobel [GHNC]; Jasper, 17-V-58, Evans & Flint [GHNC]; Hot Springs National Park, 16 and 26-IV, 2-V-62, D. H. Huntzinger [WFBC]. NEBRASKA: Schubert, 16-V-70, B. C. Ratcliffe [GHNC]. OKLAHOMA: *Muskogee Co.*, Camp Gruber, 6-VI-43, J. A. Wilcox [WFBC]. TENNESSEE: Burrville, 15-VI-60 [WFBC]. (*NEW STATE RECORDS*). Chamberlin (1926) erroneously recorded this species from several western states. Reared from *Cercis reniformis* Engelm., TEXAS: *Real Co.*, 5 mi E Camp Wood, 2-VII-71, GHN, em. 3-VI-72 (*NEW LARVAL HOST*). Chamberlin's (1926) host record of *Dasylyrion wheeleri* must be in error and may refer to *A. yuccavora* Knull. Flower visitation records include *Achillea millefolium*, *Arenaria nuttallii*, *Cornus florida*, *Crataegus* sp., *Hudsonia ericoides*, *Leucothoe racemosa*, *Phlox* sp., *Rubus trivialis*, *Tephrosia virginiana*, *Tradescantia* sp., *Viburnum rufidulum*, dewberry, hairy ruellia, and spiderwort. Also collected on *Sapindus drummondii*.

*Acmaeodera tuta* Horn. ARIZONA: *Mohave Co.*, 4 mi S Hoover Dam, 13-VI-64, WFB, on *Encelia* sp. (*NEW STATE RECORD*). In Nevada this species has been collected on *Dalea polyadenia*, *Encelia frutescens*, *Stephanomeria pauciflora*; in California on *Dalea californica*.

*Acmaeodera variegata* LeConte. Recorded from TEXAS by Chamberlin (1926); however, since erroneous concepts of this species existed at that time it is worthwhile to establish this species' occurrence in that state: *Culberson Co.*, Guadalupe Nat. Park, The Bowl, 27-VII-77, D. D. Ralston [TTCC].

*Acmaeodera wenzeli* Van Dyke. No biological information has been recorded for this species. In the Chisos Mts., Texas, it has been beaten from healthy and decadent *Acacia constricta* which likely serves as a larval host.

*Acmaeodera wheeleri* Van Dyke. Previously known only from Arizona, where it has been rarely collected. It appears to be more common farther south and specimens have been taken in SONORA: 10 mi E Navojoa, 14/21-VII-58, RLW; Alamos,

15/20-VII-58, P. D. Christenson [RLWE], 20-VII-59, RLW; 10 mi W Alamos, 21-VII-54, M. Cazier, W. Gertsch, Bradts [AMNH, GHNC]; Santa Ana, 17-VII-54, same collectors [AMNH, GHNC]; 20 mi S Hermosillo, 30-VII-66, G. C. Walters, on *Cercidium* sp. SINALOA: Rio Piaxtla, 1 mi W Hwy. 15, 30-VII-62, E. Sleeper, et al [CSLB]; 20 mi S Culiacan, 22-VII-65, DSV; 15.5 mi NW Culiacan, 8-VII-63; 3 mi N Villa Union, 30-VII-65; 6 mi S Mazatlan, 3-VII-63; 10 mi S Mazatlan, 15-VI-65, all E. M. Fisher; 35 mi N Mazatlan, 27-VI-62, A. Michelbacher [all DSVC]. (*NEW RECORD, MEXICO*). Cut from dead branch *Celtis pallida* Torrey, ARIZONA, Pinal Co., 14 mi S Florence, 17-VI-69, FMB (*NEW LARVAL HOST*).

*Acmaeodera wickenburgana* Knull. This species was described from Arizona where, like the preceding, it is a rarity. Barr (1941) recorded it from "Northern Mexico". His record probably was based on a specimen collected in SONORA: Guaymas, 5-VIII-40, R. P. Allen [CASC]; other records include 22 mi N Guaymas, 2-IX-60, DSV; 3 mi E Navojoa, 29-VII-66, G. C. Walters, on *Cercidium* sp.; 15 mi E Navojoa, 18/21-VIII-59 and 22 mi W Alamos, 17-VII-63, RLW; 35 mi S Navojoa, 24-VIII-63, A. Hardy [DSVC]. SINALOA, 23 mi N Los Mochis Jct. and Hwy. 15, 14-IX-70, E. M. Fisher [RLWE]. (*NEW STATE RECORDS*).

*Acmaeodera yuccavora* Knull. This species has been collected in abundance near Portal, Cochise Co., Arizona, on flowers of *Allionia incarnata*, mostly during the morning hours (J. M. Davidson, pers. comm.).

*Acmaeodera yumae* Knull. SONORA: St. Georges Bay, 30-V-49, F. H. Parker [CISC] (*NEW STATE RECORD*).

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#### FOOTNOTE

\* *Acmaeodera idahoensis*: Reared from *Crataegus douglasii* Lindley, OREGON: Wasco Co., Dufur City Park, wood coll. 26-V-78, em. 11-V-79, RLW (NEW LARVAL HOST).



#### BOOK REVIEW

**Handbook of common New Guinea beetles**, by J. L. Gressitt and R. W. Hornbrook. 1977. Wau Ecology Institute, c/o Bishop Museum Press, Box 6037, Honolulu, Hawaii 96818. Paper, 87p., \$4.50.

On page one of this attractive little guide to beetle *families* of New Guinea the authors inform the reader that . . . "This small handbook gives only the simplest introduction to the subject." About 45 families are included in a short key and in the text that follows. A brief description is provided for each family and some subfamilies. Some information on behavior and ecology is included. Genera found in New Guinea are also listed under the families and subfamilies. Although not every family is depicted there are about 100 illustrations of "selected representatives." The four plates in color, showing 16 species, are beautiful. The ten plates of black and white photographs are fair-to-good and 36 black and white drawings are excellent. Among the 70 references that are listed there are many important works on New Guinea beetles for the serious student of Coleoptera. Although a handful of typographical errors were noted, the only serious shortcoming of this attractive and readable book is the poorly constructed binding. At least this was the case with the review copy sent to me. This volume should be of some interest to anyone interested in Pacific beetles.

-P.P.S.